National Institute of Environmental Health Sciences

Seasonal variability in heat-related mortality across the United States

Author(s): Sheridan SC, Kalkstein AJ
Year: 2010
Journal: Natural Hazards. 55 (2): 291-305

Abstract:

This study examines the seasonal variability in the heat mortality relationship across 29 US metropolitan areas from 1975 to 2004 to discern the seasonal cycle of the health risk from anomalously high temperatures (relative to the time of season). Mortality data for the 30-year period are standardized to account for population trends and overall seasonal and interannual variability. On days when a city experienced an "oppressive" air mass, mean anomalous mortality was calculated. Results show that while the greatest overall health impact is found mid-summer in many locations due to the peak frequency of hot weather occurring at this time, the relative increase in acute mortality on oppressive air mass days is actually just as large in spring as it is in summer, and in some cases is larger. Late summer and autumn vulnerability to anomalously warm or hot days is much less significant than spring days in all areas except along the Pacific coast. Results show significant spatial variability, with the most consistent results across the more 'traditionally' heat vulnerable areas of the Midwestern and northeastern US, along with the Pacific Coast. Elsewhere, the seasonal cycle of the correlation between anomalously high temperatures and human health is more ambiguous.

Source: http://dx.doi.org/10.1007/s11069-010-9526-5

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Meteorological Factors, Temperature

Temperature: Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

Other Health Impact: heat related mortality

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified